

# Linux Exam

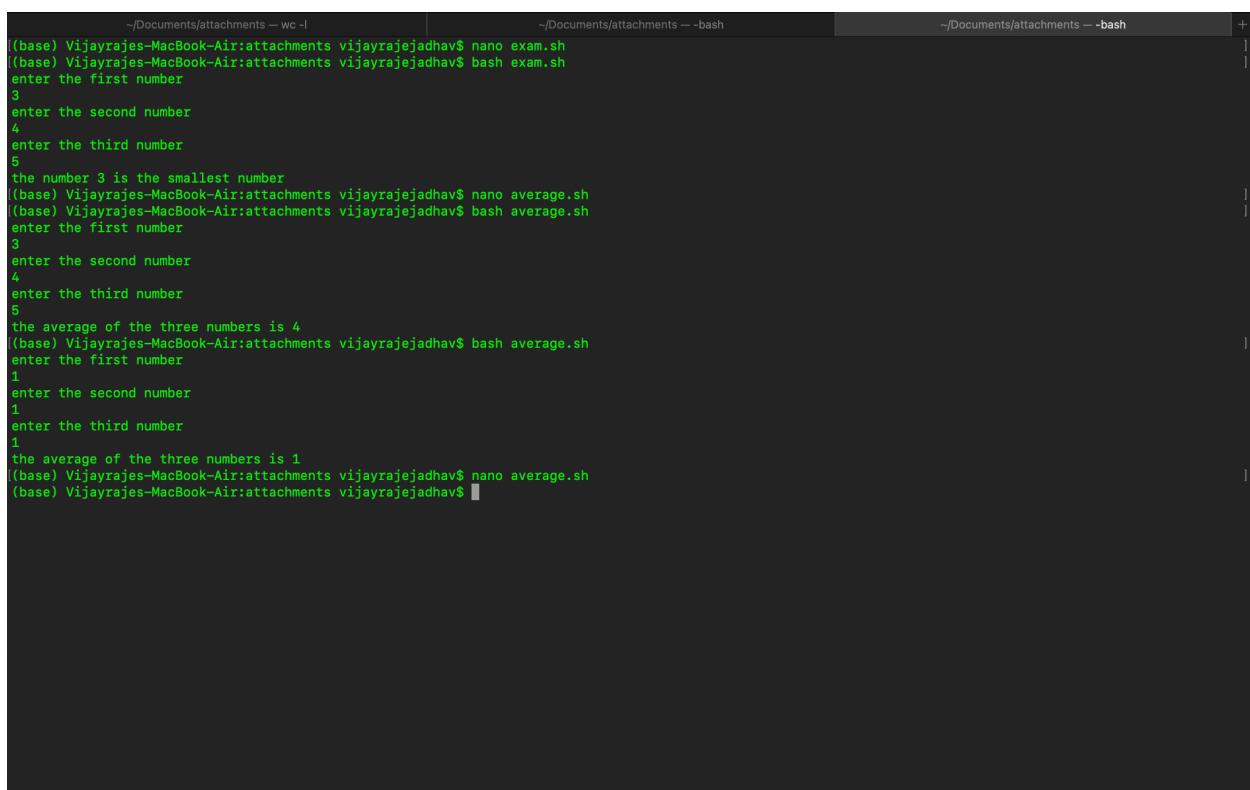
Q1)

1.

```
echo "enter the first number"
read num1
echo "enter the second number"
read num2
echo "enter the third number"
read num3
if [ $num1 -le $num2 ] && [ $num1 -le $num3 ]; then
    echo "the number $num1 is the smallest number"
elif [ $num2 -le $num1 ] && [ $num2 -le $num3 ]; then
    echo "the number $num2 is the smallest number"
else
    echo "the number $num3 is the smallest number"
fi
```

```
~/Documents/attachments -- wc -l
((base)) Vijayrajes-MacBook-Air:attachments Vijayrajejadhab$ nano exam.sh
((base)) Vijayrajes-MacBook-Air:attachments vijayrajejadhab$ bash exam.sh
enter the first number
3
enter the second number
4
enter the third number
5
the number 3 is the smallest number
(base) Vijayrajes-MacBook-Air:attachments vijayrajejadhab$
```

```
2.  
echo "enter the first number"  
read num1  
echo "enter the second number"  
read num2  
echo "enter the third number"  
read num3  
  
average=$(( (num1+num2+num3)/3 ))  
  
echo "the average of the three numbers is $average"
```



The screenshot shows a terminal window with three tabs. The current tab displays the execution of a Bash script named 'exam.sh' which prompts for three numbers and prints the smallest one. A second tab shows the execution of 'exam.sh' with inputs 3, 4, and 5, outputting 3 as the smallest. A third tab shows the execution of a script named 'average.sh' with inputs 1, 1, and 1, outputting 1 as the average.

```
~/Documents/attachments -- wc -l          ~/Documents/attachments -- bash          ~/Documents/attachments -- bash  
((base) Vijayrajes-MacBook-Air:attachments vijayrajejadhab$ nano exam.sh  
((base) Vijayrajes-MacBook-Air:attachments vijayrajejadhab$ bash exam.sh  
enter the first number  
3  
enter the second number  
4  
enter the third number  
5  
the number 3 is the smallest number  
((base) Vijayrajes-MacBook-Air:attachments vijayrajejadhab$ nano average.sh  
((base) Vijayrajes-MacBook-Air:attachments vijayrajejadhab$ bash average.sh  
enter the first number  
3  
enter the second number  
4  
enter the third number  
5  
the average of the three numbers is 4  
((base) Vijayrajes-MacBook-Air:attachments vijayrajejadhab$ bash average.sh  
enter the first number  
1  
enter the second number  
1  
enter the third number  
1  
the average of the three numbers is 1  
((base) Vijayrajes-MacBook-Air:attachments vijayrajejadhab$ nano average.sh  
((base) Vijayrajes-MacBook-Air:attachments vijayrajejadhab$
```

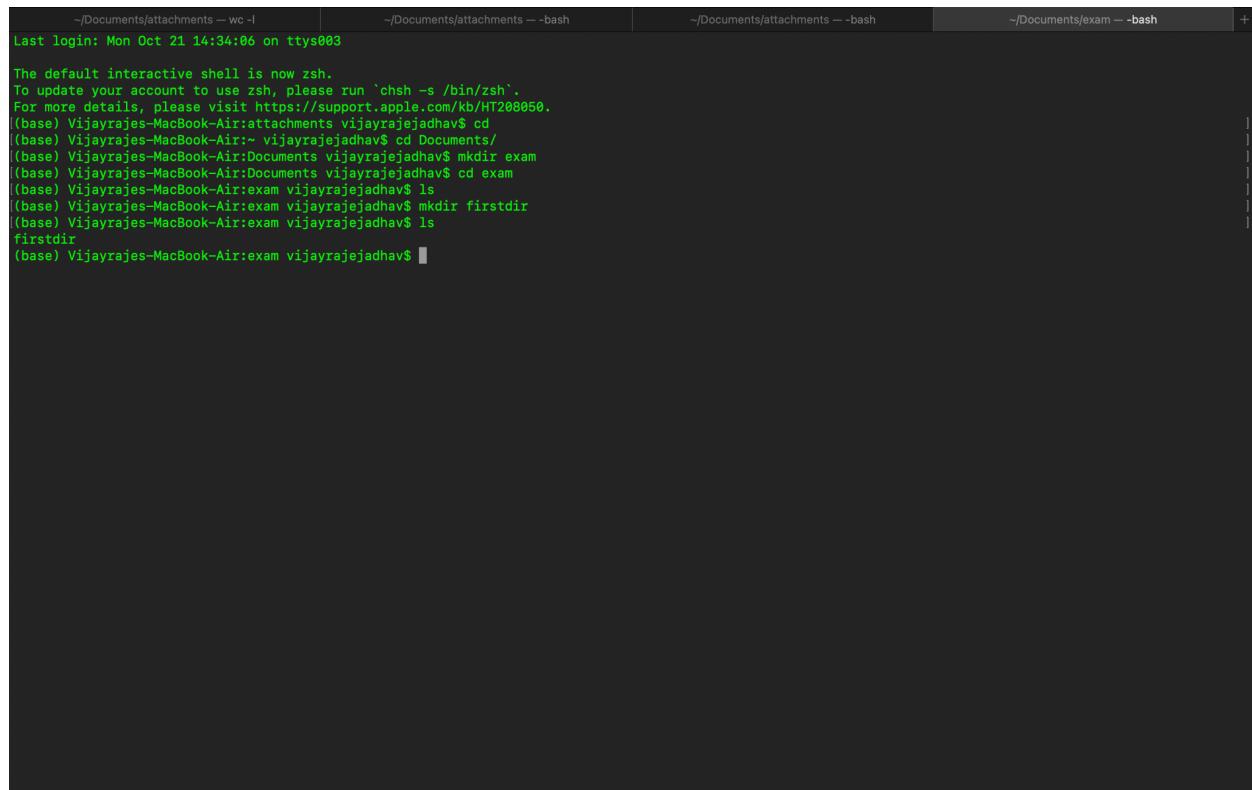
3.

```
echo "enter the first number"
read num1
echo "enter the second number"
read num2
echo "enter the third number"
read num3
sq1=$(( num1*num1 ))
sq2=$(( num2*num2 ))
sq3=$(( num3*num3 ))
sumsq=$(( sq1+sq2+sq3 ))
echo "the sum of squares of the numbers is $sumsq"
```

```
~/Documents/attachments -- wc -l | ~/Documents/attachments -- bash | ~/Documents/attachments -- bash
(base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ nano exam.sh | (base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ bash exam.sh | (base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ bash exam.sh |
enter the first number | enter the first number | enter the first number
3 | 3 | 3
enter the second number | enter the second number | enter the second number
4 | 4 | 4
enter the third number | enter the third number | enter the third number
5 | 5 | 5
the number 3 is the smallest number | the number 3 is the smallest number | the number 3 is the smallest number
(base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ nano average.sh | (base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ bash average.sh | (base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ bash average.sh |
enter the first number | enter the first number | enter the first number
3 | 3 | 3
enter the second number | enter the second number | enter the second number
4 | 4 | 4
enter the third number | enter the third number | enter the third number
5 | 5 | 5
the average of the three numbers is 4 | the average of the three numbers is 4 | the average of the three numbers is 4
(base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ bash average.sh | (base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ bash average.sh | (base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ bash average.sh |
enter the first number | enter the first number | enter the first number
1 | 1 | 1
enter the second number | enter the second number | enter the second number
1 | 1 | 1
enter the third number | enter the third number | enter the third number
1 | 1 | 1
the average of the three numbers is 1 | the average of the three numbers is 1 | the average of the three numbers is 1
(base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ nano average.sh | (base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ nano sumsquare.sh | (base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ bash sumsquare.sh |
enter the first number | enter the first number | enter the first number
1 | 1 | 1
enter the second number | enter the second number | enter the second number
1 | 1 | 1
enter the third number | enter the third number | enter the third number
1 | 1 | 1
the sum of squares of the numbers is 3 | the sum of squares of the numbers is 3 | the sum of squares of the numbers is 3
(base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ nano sumsquare.sh | (base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$ bash sumsquare.sh | (base) Vijayrajes-MacBook-Air:attachments vijayrajejad hav$
```

Q2)

1.



The terminal window displays four tabs:

- ~/Documents/attachments - wc -l
- ~/Documents/attachments -- bash
- ~/Documents/attachments -- --bash
- ~/Documents/exam -- bash

The fourth tab (~Documents/exam -- bash) contains the following shell session:

```
Last login: Mon Oct 21 14:34:06 on ttys003
The default interactive shell is now zsh.
To update your account to use zsh, please run `chsh -s /bin/zsh`.
For more details, please visit https://support.apple.com/kb/HT200050.
(base) Vijayrajes-MacBook-Air:attachments vijayrajejadhab$ cd
(base) Vijayrajes-MacBook-Air:~ vijayrajejadhab$ cd Documents/
(base) Vijayrajes-MacBook-Air:Documents vijayrajejadhab$ mkdir exam
(base) Vijayrajes-MacBook-Air:Documents vijayrajejadhab$ cd exam
(base) Vijayrajes-MacBook-Air:exam vijayrajejadhab$ ls
(base) Vijayrajes-MacBook-Air:exam vijayrajejadhab$ mkdir firstdir
(base) Vijayrajes-MacBook-Air:exam vijayrajejadhab$ ls
firstdir
(base) Vijayrajes-MacBook-Air:exam vijayrajejadhab$
```

2.

```
~/Documents/attachments - wc -l          ~/Documents/attachments -- bash          ~/Documents/attachments -- bash          ~/Documents/exam -- bash +  
Last login: Mon Oct 21 14:34:06 on ttys003  
  
The default interactive shell is now zsh.  
To update your account to use zsh, please run `chsh -s /bin/zsh`.  
For more details, please visit https://support.apple.com/kb/HT208850.  
((base) Vijayrajes-MacBook-Air:attachments vijayrajejadhav$ cd  
((base) Vijayrajes-MacBook-Air:~ vijayrajejadhav$ cd Documents/  
((base) Vijayrajes-MacBook-Air:Documents vijayrajejadhav$ mkdir exam  
((base) Vijayrajes-MacBook-Air:Documents vijayrajejadhav$ cd exam  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ ls  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ mkdir firstdir  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ ls  
firstdir  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ mv firstdir seconddir  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ ls  
seconddir  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$
```

3.

```
~/Documents/attachments - wc -l          ~/Documents/attachments -- bash          ~/Documents/attachments -- bash          ~/Documents/exam/newlocation -- bash +  
Last login: Mon Oct 21 14:34:06 on ttys003  
  
The default interactive shell is now zsh.  
To update your account to use zsh, please run `chsh -s /bin/zsh`.  
For more details, please visit https://support.apple.com/kb/HT208850.  
((base) Vijayrajes-MacBook-Air:attachments vijayrajejadhav$ cd  
((base) Vijayrajes-MacBook-Air:~ vijayrajejadhav$ cd Documents/  
((base) Vijayrajes-MacBook-Air:Documents vijayrajejadhav$ mkdir exam  
((base) Vijayrajes-MacBook-Air:Documents vijayrajejadhav$ cd exam  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ ls  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ mkdir firstdir  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ ls  
firstdir  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ mv firstdir seconddir  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ ls  
seconddir  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ mkdir newlocation  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ ls  
newlocation  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ mv seconddir /Users/vijayrajejadhav/Documents/exam/newlocation  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ ls  
newlocation  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ cd newlocations  
-bash: cd: newlocations: No such file or directory  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhav$ cd newlocation/  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhav$ ls  
seconddir  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhav$
```

#### 4.

```
~/Documents/attachments -- wc -l      ~/Documents/attachments -- bash      ~/Documents/attachments -- -bash      ...am/newlocation/seconddir -- bash      ...uments/exam/newlocation -- -bash +  
Last login: Mon Oct 21 15:11:39 on ttys004  
  
The default interactive shell is now zsh.  
To update your account to use zsh, please run `chsh -s /bin/zsh`.  
For more details, please visit https://support.apple.com/kb/HT208050.  
((base) Vijayrajes-MacBook-Air:seconddir vijayrajejadhab$ rmdir seconddir  
rmdir: seconddir: No such file or directory  
((base) Vijayrajes-MacBook-Air:seconddir vijayrajejadhab$ ls  
newfile.txt  
((base) Vijayrajes-MacBook-Air:seconddir vijayrajejadhab$ cd Documents  
-bash: cd: Documents: No such file or directory  
((base) Vijayrajes-MacBook-Air:seconddir vijayrajejadhab$ cd  
((base) Vijayrajes-MacBook-Air:~ vijayrajejadhab$ cd Documents/exam/  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhab$ ls  
newlocation  
((base) Vijayrajes-MacBook-Air:exam vijayrajejadhab$ cd newlocation  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhab$ ls  
seconddir  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhab$ mkdir seconddir  
mkdir: seconddir: File exists  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhab$ rmdir seconddir  
rmdir: seconddir: Directory not empty  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhab$ cd seconddir  
((base) Vijayrajes-MacBook-Air:seconddir vijayrajejadhab$ ls  
newfile.txt  
((base) Vijayrajes-MacBook-Air:seconddir vijayrajejadhab$ rm newfile.txt  
((base) Vijayrajes-MacBook-Air:seconddir vijayrajejadhab$ ls  
((base) Vijayrajes-MacBook-Air:seconddir vijayrajejadhab$ -cd  
-bash: -cd: command not found  
((base) Vijayrajes-MacBook-Air:seconddir vijayrajejadhab$ cd Documents/exam/newlocation  
-bash: cd: Documents/exam/newlocation: No such file or directory  
((base) Vijayrajes-MacBook-Air:seconddir vijayrajejadhab$ cd /Users/vijayrajejadhab/Documents/exam/newlocation  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhab$ ls  
seconddir  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhab$ rmdir seconddir  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhab$ ls  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhab$
```

#### 5. Here we have given read and write permission to user and group

```
...uments/attachments -- wc -l      ...ments/attachments -- bash      ...ments/attachments -- -bash      ...location/seconddir -- bash      .../exam/newlocation -- -bash      .../exam/newlocation -- -bash +  
Last login: Mon Oct 21 15:24:06 on ttys005  
  
The default interactive shell is now zsh.  
To update your account to use zsh, please run `chsh -s /bin/zsh`.  
For more details, please visit https://support.apple.com/kb/HT208050.  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhab$ touch new.txt  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhab$ ls  
new.txt  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhab$ chmod ugo+r new.txt  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhab$ chmod ugo+w new.txt  
((base) Vijayrajes-MacBook-Air:newlocation vijayrajejadhab$
```

